

21. The communication program of claim 19, further comprising modem software that implements a conversion between data and digital samples representing a signal in accordance with a communication protocol.--

REMARKS

Claims 1-10 were pending in the above-identified application when last examined and are amended as indicated above. The claim amendments clarify the claim language and are not intended to limit the scope of the claims, unless the claim language is expressly quoted in the following remarks to distinguish over the art cited.

Claims 1, 2, and 4-9 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. patent No. 5,408,614 (Thornton). Applicant respectfully traverses the rejection.

Thornton is directed to a "modem adapter for use with a standard parallel port of a personal computer (PC) ... The modem adapter ... neither requires any additional circuit cards in the PC's card slots nor dedication of any of the existing serial ports." See the Abstract of Thornton. To permit connection of a modem to a parallel port instead of a serial port, Thornton discloses redirector software that "intercepts software I/O instructions directed toward a serial I/O port and redirects and reformats these instructions to the modem adapter through the parallel port." Accordingly, Thornton redirects modem communications away from the normal destination (e.g., a PC card slot or a serial port) to a parallel port. Thornton does not disclose or suggest a device having a non-standard interface connected to a local bus.

Claim 1 distinguishes over Thornton at least by reciting, "a device coupled to the local bus ...; and a communications driver ... comprising a UART emulation." Thornton does not disclose the combination of a device connected to a local bus and a UART emulation. The Examiner identifies the modem adapter 10 as corresponding to the device coupled to the local bus. However, modem adapter 10 couples to the parallel port 20 of a personal computer.

The Examiner indicated that "It would have been obvious ... to have [Thornton's] device coupled to the local bus because it would have direct connection to the control/address/data bus within the PC." Applicant disagrees because connecting the modem adapter disclosed by Thornton to a local bus is contrary to the purpose of the modem adapter. Thornton seeks to avoid a device that occupies a slot on a local bus.

Thornton's connection of a modem to the parallel port necessitates redirector software to make the modem adapter usable with existing communications software that expects modems connected to serial ports. Thornton fails to suggest a purpose for the redirector software with a device that connects to the local bus. A conventional modem that connects to a local bus does not require redirector software. A conventional modem can employ a standard UART. Thornton fails to provide any suggestion of a device that connects to a local bus and has anything other than the standard interface. Even for the device coupled to a parallel port, Thornton describes a standard USART. See col. 8, lines 12-20 and 61-64.

As taught in Applicant's specification, a host signal processing (HSP) modem has hardware that performs A-to-D and D-to-A conversions while the host processor executes software that implements modem protocols. The HSP modem hardware performs a function different from that of a conventional modem hardware, making a non-standard interface (e.g., non-UART interface) convenient. Thornton does not address the concerns of connecting a non-standard device to the expected location of a standard device. Instead, Thornton discloses a standard connection to a parallel port and redirector software to redirect communication from the expected serial port to the parallel port.

Accordingly, claim 1 is patentable over Thornton. Claim 2 depends from claim 1 and is patentable over Thornton for the same reasons that claim 1 is patentable over Thornton.

Claim 4 distinguishes over Thornton by reciting, "coupling the I/O interface of the device to a local bus ...; allocating in a memory of the computer, storage locations which correspond to registers of a UART; and transmitting information via the local bus between the I/O interface of the device and the allocated storage locations in the memory of the computer." As indicated in regard to claim 1, Thornton fails to disclose or suggest any motivation for using redirector software with a device connected to a local bus, and therefore, does not suggest the combination of "coupling the I/O interface of the device to a local bus" and "allocating in a memory of the computer, storage locations which correspond to registers of a UART." Accordingly, claim 4 and claims 5-9, which depend from claim 4, are patentable over Thornton.

Claim 9 further distinguishes over Thornton by reciting "setting a base device address for the device to correspond to one of the I/O slots allocated by the operating environment for a UART."

For the above reasons, Applicant requests reconsideration and withdrawal of this rejection under 35 U.S.C. § 103.

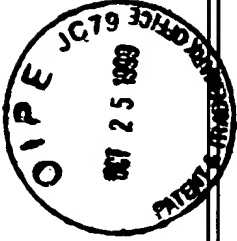
Claims 1, 3, 4, 9, and 10 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. patent No. 5,640,594 (Gibson) in view of U.S. patent No. 5,408,614 (Thornton). Applicant respectfully traverses the rejection.

Claim 1 distinguishes over the combination of Gibson and Thornton at least by reciting, "a device coupled to the local bus, ...; and ... a UART emulation." Gibson and Thornton separately and in combination fail to disclose or suggest a system including a device connected to a local bus and a UART emulation.

Gibson discloses a device connected to a local bus and methods for assigning peripheral device addresses. Gibson does not describe any particular function for the device or whether the device has a UART. Thornton describes a device for connection to a parallel port. The Examiner indicated it would have been obvious to have the device of Thornton coupled to the local bus as is Gibson's device because "it would have direct connection to the control/address/data bus within the PC." Applicant respectfully disagrees for the reasons given above. In particular, Thornton particularly seeks to avoid using a slot on a local bus and discloses a modem connected to the parallel bus to achieve this goal. Thus, connecting the device to the local bus defeats the purpose of Thornton's invention. Further, Gibson and Thornton fail to suggest any need for redirector software with a device that connects to the local bus where a standard UART interface can be employed. Accordingly, claim 1 and claims 3, 4, and 9-10, which depend from claim 1, are patentable over Gibson and Thornton.

For the above reasons, Applicant requests reconsideration and withdrawal of this rejection under 35 U.S.C. § 103.

Claims 1 and 4 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. patent 5,787,305. Applicant is filing the accompanying terminal disclaimer to overcome the double patenting rejection. In view of the terminal disclaimer, Applicant requests reconsideration and withdrawal of the double patenting rejection.



Claims 17 to 21 are added. Independent claim 17 distinguishes over the cited references at least by reciting, "a device adapted for connection to a local bus ...; and ... a UART emulation." As noted above, the cited reference fails to suggest using a UART emulation for a device coupled to a local bus. Claim 18 depends from claim 17 and is patentable for at least the same reasons that claim 17 is patentable. Claim 19 distinguishes over the cited reference by reciting, "the host computer ... logically assigns a first port to a UART; and the register set of the non-standard device physically occupies addresses corresponding to the first port." Claims 20 and 21 depend from claim 19 and are patentable over the cited reference for at least the same reasons that claim 19 is patentable over the cited references.

In summary, claims 1-10 were pending in the application. This response amends claim 1 and adds claims 17-22. For the above reasons, Applicants respectfully request allowance of claims 1-10 and 17-22. Should the Examiner have any questions concerning this response, the Examiner is invited to call the undersigned at (408) 453-9200.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: ASSISTANT COMMISSIONER FOR PATENTS, Washington, D.C. 20231, on October 21, 1999.

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Date of Signature

Respectfully submitted,

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